

# **CURRICULUM VITAE**

## **Mark J. Mendell, Ph.D., M.P.H., B.L.Arch.**

### **Contact Information (2013-5-15)**

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### **Current Positions:**

Staff Scientist/ Epidemiologist, Indoor Environment Department, Environmental Energy Technologies Division, Lawrence Berkeley National Laboratory (University of California), Berkeley, CA (July, 2002 – Feb. 2009; Feb, 2009 – present, half-time); responsibilities include studying the causes and prevention of adverse effects of poor indoor environmental quality on health and performance of building occupants.

Air Pollution Research Specialist, Indoor Air Quality Section, Environmental Health Lab Branch, Division of Environmental and Occupational Disease Control, California Department of Public Health (Feb 2009 – present, half-time); research and technical assistance related to health effects of indoor environments.

### **Previous Positions:**

Indoor Environment Department, Environmental Energy Technologies Division, Lawrence Berkeley National Laboratory, Berkeley, OH (August, 2000 – July 2002); guest scientist on detail from NIOSH

Industrywide Studies Branch, National Institute for Occupational Safety and Health (NIOSH), U.S. Centers for Disease Control and Prevention; Cincinnati, OH (November, 1991 – August, 2000); epidemiologist

Indoor Environment Program, Lawrence Berkeley Laboratory, Berkeley, California (January, 1990 -- November, 1991); Graduate Research Assistant.

Environmental Epidemiology and Toxicology Program, California Department of Health Services, Emeryville, California (October, 1984 -- November, 1991); Graduate Research Assistant/Research Analyst.

### **Education**

Doctor of Philosophy in Epidemiology: School of Public Health, University of California – Berkeley, 1991 (dissertation research on occupational health).

Master of Public Health: School of Public Health, University of California – Berkeley, 1984 (interdisciplinary studies in epidemiology and behavioral science).

Bachelor of Landscape Architecture: School of Architecture and Allied Arts, University of Oregon, Eugene, 1978 (professional degree in landscape architecture and urban design).

Bachelor of Arts: Cornell University, College of Arts and Sciences, Ithaca, New York, 1972 (College Scholar Program -- interdisciplinary studies in physical and behavioral sciences).

### **Publications – Peer-Reviewed Articles and Chapters**

1. Mendell MJ, Eliseeva A, Davies MM, Lobscheid A, Fisk WJ, Apte, MG. Association of classroom ventilation with reduced illness absence: a prospective study in California elementary Schools. Indoor Air 2013; doi: 10.1111/ina.12042.
2. Satish U, Mendell MJ, Shekhar K, Hotchi T, Sullivan D, Streufert S, Fisk WJ. Is CO<sub>2</sub> an Indoor Pollutant? Direct Effects of Low-to-Moderate CO<sub>2</sub> Concentrations on Human Decision-Making Performance. Environmental Health Perspectives 2012; 120: 1671-1677, doi:10.1289/ehp.1104789.

3. Mendell MJ, Mirer AG, Cheung K, Tong M, Douwes J. Respiratory and Allergic Health Effects of Dampness, Mold, and Dampness-Related Agents: A Review of the Epidemiologic Evidence. *Environmental Health Perspectives* 2011; 119:748-756. doi:10.1289/ehp.1002410.
4. Fisk WJ, Eliseeva E, Mendell MJ. Association of residential dampness and mold with respiratory tract infections and bronchitis: a meta-analysis. *Environmental Health* 2010;9:72, doi:10.1186/1476-069X-9-72. [article, LBNL-4158E]
5. Mendell MJ, Mirer A. Thermal factors and symptoms in office workers: findings from the U.S. EPA BASE Study. *Indoor Air* 2009; 19: 291–302. [article, LBNL-2083E]
6. Mendell MJ, Mirer AG, Cheung K, Douwes J, Sigsgaard T, Bønløkke J, Meyer H, Hirvonen M-R, Roponen M. Health effects associated with dampness and mould, Chap 4 in *WHO Guidelines for Indoor Air Quality: Dampness and Mould*; ed.: World Health Organization; WHO Regional Office for Europe, Copenhagen:2009.
7. Fisk WJ. Mirer AG, Mendell MJ. Quantitative relationship of sick building syndrome symptoms with ventilation rates. *Indoor Air* 2009;19:159-65. [article and report, LBNL-2043-E]
8. Mendell MJ, Lei-Gomez Q, Mirer A, Seppänen O, Brunner G. Risk factors in heating, ventilating, and air-conditioning systems for occupant symptoms in U.S. office buildings: the U.S. EPA BASE study. *Indoor Air* 2008; 18:301-16. [LBNL-61870].
9. Apte, MG, Buchanan ISH, Mendell MJ. Outdoor ozone and building related symptoms in the BASE study. *Indoor Air* 2008; 18 (2):156–170. [report LBNL-62419]
10. Buchanan I, Mendell MJ, Mirer A, Apte M. Air filter materials, outdoor ozone and building-related symptoms in the BASE study. *Indoor Air* 2008; 18 (2): 144–155. [report, LBNL-62508]
11. Fisk WJ, Lei-Gomez Q, Mendell MJ. Meta-analyses of the associations of respiratory health effects with dampness and mold in homes. *Indoor Air* 2007;17:284-96. [report, LBNL-59363]
12. Mendell MJ. Indoor residential chemical emissions as risk factors for respiratory and allergic effects in children: a review. *Indoor Air* 2007;17:259-77. [report, LBNL- 61280]
13. Mendell MJ, Brennan T, Hathon L, Odom JD, Offerman FJ, Turk BH, Wallingford K, Diamond RC, Fisk WJ. Causes and prevention of symptom complaints in office buildings: distilling the experience of indoor environmental quality investigators. *Facilities* 2006; 24:436-44. [report, LBNL- 59329]
14. Mendell MJ, Cozen MC, Lei-Gomez Q, Brightman HS. Indicators of moisture and microbial contamination in U.S. office buildings as risk factors for respiratory and mucous membrane symptoms: analyses of the EPA BASE data. *Journal of Occupational and Environmental Hygiene* 2006; 3; 225-33. [LBNL-53850]
15. Mendell MJ, Heath GA. Do indoor pollutants and thermal conditions in schools influence student performance? A critical review of the literature. *Indoor Air* 2005; 15:27-52. [LBNL-51780]
16. Mendell MJ. Commentary: Air-conditioning as a risk for increased use of health services (invited commentary). *International Journal of Epidemiology* 2004; 33:1123-6. [LBNL-55476].
17. Mendell MJ. Indices for IEQ and building-related symptoms (*invited commentary*). *Indoor Air* 2003;13:364-368. [LBNL-53964]
18. Mendell MJ, Naco GN, Wilcox TG, Sieber WK. Environmental Risk Factors and Work-Related Lower Respiratory Symptoms in 80 Office Buildings: An Exploratory Analysis of NIOSH Data. *Amer J Indust*

Med 2003;43:630-41.

19. Mendell MJ, Fisk WJ, Kreiss K, et al. Improving health of workers in indoor environments: priority research needs for the National Occupational Research Agenda. Am J Public Health 2002, 92: 1430-40.
20. Fisk WJ, Mendell MJ. Ventilation rates and health. ASHRAE Journal 2002; 44:56-58.
21. Sieber WK, Petersen MR, Stayner L, Mendell MJ, Malkin R, Wallingford K, Crandall MS, Wilcox T, Reed L, Hurrell J. HVAC characteristics and health. ASHRAE Journal 2002;44: 49-50
22. Mendell MJ, Fisk WJ, Petersen MR, Hines CJ, Dong M, Faulkner D, Deddens JA, Ruder AM, Sullivan D, Boeniger MF. Indoor particles and symptoms among office workers: results from a double-blind cross-over study. Epidemiology 2002;13: 296-304.
23. Fisk WJ, Faulkner D, Sullivan S, Mendell MJ. Particle concentrations and sizes with normal and high efficiency air filtration in a sealed air-conditioned office building. Aerosol Science and Tech 2000;32:527-44.
24. Hines CJ, Milton DK, Larsson L, Petersen MR, Fisk WJ, Mendell MJ. Characterization of endotoxin and 3-hydroxy fatty acids in an office building. Indoor Air 2000;10:2-12.
25. Seppänen O, Fisk WJ, Mendell MJ. Association of ventilation rates and CO<sub>2</sub> concentrations with health and other human responses in commercial and institutional buildings. Indoor Air 1999; 9:226-52.
26. Mendell MJ, Fisk WJ, Dong M, Petersen M, Hines CH, Faulkner D, Deddens JA, Ruder AM, Sullivan D, Boeniger MF. Enhanced particle filtration in a non-problem office environment: preliminary results from a double-blind crossover intervention study. Amer J Indust Med 1999;supp 1:55-7.
27. Dong MX, Petersen MR, Mendell MJ. Using pilot data to estimate sample size and compare question forms for a crossover study. Journal of Occupational Health 1998;40:307-12.
28. Ten Brinke J, Selvin S, Hodgson AT, Fisk WJ, Mendell MJ, Koshland CP, Daisey JM. Development of new volatile organic compound (VOC) exposure metrics and their relationship to "sick building syndrome" symptoms. Indoor Air 1998; 8:140-152.
29. Mendell MJ, Fisk JF, Deddens JA, Seavey WG, Smith AH, Smith DF, Hodgson AT, Daisey JM, Goldman L. Elevated symptom prevalence associated with ventilation type in office buildings: findings from the California Healthy Building Study. Epidemiology 1996;7:583-89.
30. Sieber WK, Petersen MR, Stayner L, Mendell MJ, Malkin R, Wallingford K, Crandall MS, Wilcox T, Reed L, Hurrell J. The NIOSH indoor environmental evaluation experience. Part three: associations between environmental factors and self-reported health conditions. Appl Occup Environ Hyg 1996;11:1387-92.
31. Mendell MJ, Fine L. Building ventilation and symptoms: where do we go from here? (*editorial*) American Journal of Public Health 1994;84:346-8.
32. Daisey JM, Hodgson AT, Fisk WJ, Mendell MJ, Ten Brinke J. Volatile organic compounds in twelve California office buildings: classes, concentrations and sources. Atmospheric Environment 1994;28:3557-62.
33. Mendell MJ. Non-specific symptoms in office workers: a review and summary of the epidemiologic literature. Indoor Air 1993;3:227-36.
34. Fisk WJ, Mendell MJ, Daisey JM, Faulkner D, Hodgson AT, Macher JM. Phase 1 of the California Healthy Building Study: a summary. Indoor Air 1993;3:246-54.

35. Mendell MJ, Smith AH. "Consistent pattern of elevated symptoms in air-conditioned office buildings: a reanalysis of epidemiologic studies." American Journal of Public Health 1990; 80:1193-99.
36. Layefsky ME, Smith DF, Mendell MJ, Schlag RD, Neutra R. "California Superfund sites: insights from a computerized database," Hazardous Waste and Hazardous Materials 1988;5,313-20.

#### **Publications -- Conference Proceedings, Technical Reports, Abstracts, and Letters**

Fisk WJ, Mendell MJ, Davies M, Eliseeva E, Faulkner D, Hong T, Sullivan D. Demand Controlled Ventilation and Classroom Ventilation. draft final report for the California Energy Commission, May 2012.

Mendell MJ, Apte MG. Balancing energy conservation and occupant needs in ventilation rate standards for "Big Box" stores and other commercial buildings in California: Issues related to the ASHRAE 62.1 Indoor Air Quality Procedure. LBNL Report Number: LBNL-6200E (5-9-2013)

Dutton SM, Chan WR, Mendell MJ, Barrios M, Parthasarathy S, Sidheswaran M, Sullivan DP, Eliseeva K, Fisk WJ. Evaluation of the Indoor Air Quality Procedure for use in retail buildings. LBNL Report Number LBNL-6079E (2-6-2013).

Apte MG, Mendell MJ, Sohn MD, Dutton SM, Berkeley PM, Spears M. Balancing energy conservation and occupant needs in ventilation rate standards for Big Box stores in California: predicted indoor air quality and energy consumption using a matrix of ventilation scenarios. LBNL Report Number: LBNL-5551E, (7-26-2012)

Mendell MJ, Apte MG. The Indoor Air Quality Procedure in the ASHRAE Ventilation Standard for Commercial Buildings: Is It Needed? Is It Ready? Proceedings of Indoor Air 2011, Austin, TX; Jun 5-10, 2011; a438.

Mendell MJ. Evaluating damp houses with the Environmental Relative Moldiness Index (ERMI) and fungal PCR: A review of the epidemiologic evidence. Proceedings of Indoor Air 2011, Austin, TX; Jun 5-10, 2011; a934.

Apte MG, Chan W, Mendell MJ, Willem H. Study Design of the Healthy Zero Energy Buildings (HZEB) Program in California. Proceedings of Indoor Air 2011, Austin, TX; Jun 5-10, 2011; a136.

Satish U, Fisk WB, Mendell MJ, Eliseeva K, Hotchi T, Sullivan D, Cleckner LB, Shekhar K, Teng K. Impact of CO<sub>2</sub> on human decision making and productivity. Proceedings of Indoor Air 2011, Austin, TX; Jun 5-10, 2011; a574.

Apte MG, Mendell MJ, Sohn MD, Berkeley PM, Dutton SM, Spears M. Balancing energy conservation and occupant needs in ventilation rate standards for "Big Box" stores in California: predicted indoor air quality and energy consumption using a matrix of ventilation scenarios. Technical paper for the California Energy Commission, 2010.

Mendell MJ, Apte MG. Balancing energy conservation and occupant needs in ventilation rate standards for "Big Box" stores and other commercial buildings in California: Issues related to the ASHRAE 62.1 Indoor Air Quality Procedure. Technical paper for the California Energy Commission, 2010.

Mendell MJ. Fungi on Air- Conditioning Cooling Coils and Drainage Pans, Identified with Polymerase Chain Reaction (PCR) Assays. Poster presented at the 2008 Conference of the International Society for Environmental Epidemiology, Dublin, Ireland; Aug 25-29, 2009.

Mendell MJ, Mirer AG. Can the U.S. EPA BASE Study be used to provide reference levels for building-

related symptoms in offices? Proceedings of Healthy Buildings '09, Syracuse, NY; Aug 17-22, 2009; paper 756

Fisk W, Spears M, Sullivan D, Mendell M. Ozone removal by filters containing activated carbon: a pilot study. Proceedings of Healthy Buildings '09, Syracuse, NY; Aug 17-22, 2009; paper 360.

Mendell MJ, Eliseeva E, Spears M, Fisk WJ. Development and Field-Testing of a Study Protocol, including a Web-Based Occupant Survey Tool, for Use in Intervention Studies of Indoor Environmental Quality. Technical report for the U.S. General Services Administration [LBNL-2030E-REV].

Fisk WJ, Mirer AG, Mendell MJ. Quantification of the association of ventilation rates with sick building syndrome symptoms. Proc of Indoor Air 08: the Eleventh International Conference on Indoor Air Quality and Climate, Copenhagen, #730, Aug 17-22, 2008 [, LBNL TBA].

Mendell MJ, Lei-Gomez Q, Apte M. Ventilation (estimated three ways) and building-related symptoms in U.S. office buildings – the U.S. EPA BASE study. Proc of Indoor Air 08: the Eleventh International Conference on Indoor Air Quality and Climate, Copenhagen, #158, Aug 17-22, 2008 [, LBNL TBA].

Mendell MJ, Mirer A, Lei-Gomez Q. Contaminants in Buildings and Occupied Spaces as Risk Factors for Occupant Symptoms in U.S. Office Buildings: the U.S. EPA BASE Study, 2008 [report, LBNL 63370].

Mendell MJ, Lei-Gomez Q, Mirer A, Seppänen O. Risk factors in heating, ventilating, and air-conditioning systems for occupant symptoms in U.S. office buildings: the EPA BASE Study. [report, LBNL- 61870]

Mendell MJ, Fisk WJ. "Is building health related only to psychosocial health?" Occupational and Environmental Medicine 2007;64:69-70 (letter).

Mendell MJ. Indoor Residential Chemical Exposures as Risk Factors for Asthma and Allergy in Infants and Children: a Review. Proceedings of Healthy Buildings '06, Lisbon, Portugal, June 4-8, 2006, I:151-56. [LBNL-59781]

Mendell MJ, Lei Q, Cozen MC, Brightman HS, Apte M, Erdmann CA, Brunner G, Girman JR. Indoor Environmental Risk Factors for Occupant Symptoms in 100 U.S. Office Buildings: Summary of Three Analyses from the EPA BASE Study. Proceedings of Healthy Buildings '06, Lisbon, Portugal, June 4-8, 2006, III:371-76. [LBNL-59659]

Fisk WJ, Lei Q, Mendell MJ. Meta-Analyses of the Associations of Respiratory Health Effects with Dampness and Mold in Homes. [report, LBNL-59361]

Mendell MJ, Brennan, T, Hathon L, Odom JD, Offerman FJ, Turk BH, Wallingford KM, Diamond RC, Fisk WJ. Causes and prevention of symptom complaints in office buildings: distilling the experience of indoor environmental quality investigators. Indoor Air '05: Proceedings of the Tenth International Conference on Indoor Air Quality and Climate, Beijing, China, Sept 14-19, 2005, IV:3500-04. [LBNL-56382, report and conf paper].

Mendell MJ, Cozen MC, Lei Q, Brightman HS. Indicators of moisture and ventilation system contamination in U.S. office buildings as risk factors for respiratory and mucous membrane symptoms: analyses of the EPA BASE data. Indoor Air '05: Proceedings of the Tenth International Conference on Indoor Air Quality and Climate, Beijing, China, Sept 14-19, 2005, V:3763-67. [LBNL-57101, conf paper].

Mendell MJ, Lei Q, Apte M, Fisk WJ. Estimated ventilation rates and work-related symptoms in U.S. office buildings -- the BASE Study. Indoor Air '05: Proceedings of the Tenth International Conference on Indoor Air Quality and Climate, Beijing, China, Sept 14-19, 2005, V:3758-62. [LBNL-57102, conf paper].

Mendell MJ, Lei Q, Apte M, Fisk WJ. Comparing metrics for ventilation rate in predicting work-related

symptoms in U.S. office buildings – the BASE study. Berkeley, CA: Lawrence Berkeley National Laboratory [LBNL-56381, report], 2004

(Mendell MJ and Heath G, authors) U. S. Department of Education, Office of the Under Secretary. A Summary of Scientific Findings on Adverse Effects of Indoor Environments on Students' Health, Academic Performance and Attendance. U.S. Department of Education – Policy and Program Studies Service, document # 2004-06, Washington, D.C., 2004.

Mendell MJ, Macher JM, Lei Q, Cozen M, Tsai FC, Shendell DG. Association of Airborne Moisture-Indicating Microorganisms with Building-Related Symptoms and Water Damage in 100 U.S. Office Buildings: Analyses of the U.S. EPA BASE Data. Berkeley, CA: Lawrence Berkeley National Laboratory LBNL-53908, 2003.

Mendell MJ, Cozen M, Lei Q. Indicators of Moisture and Contamination in U.S. Office Buildings as Risks for Respiratory and Irritant Symptoms: Analyses of the EPA BASE Data. Berkeley, CA: Lawrence Berkeley National Laboratory LBNL-53850, 2003.

Mendell MJ, Levin H. Summary of ongoing federal research into the effects of indoor air quality in schools on the health or performance of students and teachers. December, 2002. Report for the U.S. Department of Education.

Mendell MJ, Erdmann C. National studies of the health and learning impacts of environmentally unhealthy public school buildings: an options paper. Report for the U.S. Department of Education.

Mendell MJ, Erdmann C. Effects of unhealthy school environments on health and performance. May, 2003. Visual presentation and handouts prepared for the U.S. Department of Education.

Heath GA, Mendell MJ. Do indoor environments in schools influence student performance? A review of the literature. Indoor Air '02: Proceedings of the Ninth International Conference on Indoor Air Quality and Climate, Monterey, CA, June 30-July 5, 2002; 1: 802-7.

Mendell MJ, Naco GN, Wilcox TG, Sieber WK. Building-related risk factors and work-related lower respiratory symptoms in 80 office buildings. Indoor Air '02: Proceedings of the Ninth International Conference on Indoor Air Quality and Climate, Monterey, CA, June 30-July 5, 2002;1: 103-8.

Fisk WJ, Brager G, Brook M, Burge H, Cole J, Cummings J, Levin H, Loftness V, Logee T, Mendell MJ, Persily A, Taylor S, Zhang J (2002) A priority agenda for energy-related indoor environmental quality research. Indoor Air '02: Proceedings of the Ninth International Conference on Indoor Air Quality and Climate, Monterey, CA, June 30-July 5, 2002; 2: 984-89.

Mendell MJ, Naco GN, Wilcox TG, Sieber WK. Lower respiratory symptom-based outcome definitions to assess risk factors for microbiologic contamination in office buildings (abstract). Epidemiology 2002 (supplement).

Mendell MJ. The epidemiology of medically unexplained symptoms attributed to indoor air quality. (abstract). Epidemiology 2002 (supplement).

Mendell MJ. Non-specific symptoms in office workers: a review and summary of the epidemiologic literature. Proceedings of SBS III: Workshop on ProKlimA Study of Indoor Air and Health. German Ministry of Education, Science, Research, and Technology: Bonn, Germany; March, 1999 (reprinted in German translation, from original in Indoor Air 1993;3:227-36).

Mendell MJ, Fisk WJ, Petersen M, Dong MX, Hines CH, Faulkner D, Deddens JA, Ruder AM, Sullivan D, Boeniger MF. Enhanced particle filtration in a non-problem office environment: summary findings from a double-blind crossover intervention study. Indoor Air '99: Proceedings of the Eighth International

Conference on Indoor Air Quality and Climate, 1999, Edinburgh, Scotland; 4: 974-5.

Fisk WJ, Faulkner D, Sullivan S, Mendell MJ. Particle concentration and sizes with normal and high efficiency air filtration in a sealed air-conditioned office building. Indoor Air '99: Proceedings of the Eighth International Conference on Indoor Air Quality and Climate, 1999, Edinburgh, Scotland; 4: 19.

Fisk WJ, Faulkner D, Sullivan D, Dong M, Dabrowski C, Thomas JM Jr, Mendell MJ, Hines CJ, Ruder A, Boeniger M. The Healthy Building Intervention Study: objectives, methods, and results of selected environment measurements. Berkeley, CA: Lawrence Berkeley National Laboratory LBNL-41546, 1998.

Mendell MJ, Sieber WK, Dong MX, Malkin R, Wilcox T. Symptom prevalence distributions in U.S. office buildings investigated by NIOSH for indoor environmental quality complaints. Indoor Air '96: Proceedings of the Seventh International Conference on Indoor Air Quality and Climate, 1996, Nagoya, Japan, 2:877-882.

Sieber WK, Petersen MR, Stayner L, Mendell MJ, Malkin R, Wallingford K, Crandall MS, Wilcox T, Reed L, Hurrell J. Associations between environmental factors and health conditions. Indoor Air '96: Proceedings of the Seventh International Conference on Indoor Air Quality and Climate, 1996, Nagoya, Japan, 2:901-906.

Piacitelli, LP, Mendell MJ. Baker-Olin West Building, Lansing, Michigan (HETA 93-0811). NIOSH Health Hazard Evaluation Report, Cincinnati, Ohio: U.S. Dept. of Health and Human Services, 1993.

Piacitelli, LP, Mendell MJ. Zondervan Corporation, Grand Rapids, Michigan (HETA 93-0195). NIOSH Health Hazard Evaluation Report, Cincinnati, Ohio: U.S. Dept. of Health and Human Services, 1993.

Wallingford KM, Mendell MJ. Superior Courthouse, New Haven, Connecticut (HETA 93-485). NIOSH Health Hazard Evaluation Report, Cincinnati, Ohio: U.S. Dept. of Health and Human Services, August, 1993.

Wallingford KM, Mendell MJ. Second Injury Fund, Windsor, Connecticut (HETA 93-482). NIOSH Health Hazard Evaluation Report, Cincinnati, Ohio: U.S. Dept. of Health and Human Services, September, 1993.

Mendell MJ. Optimizing research on office worker symptoms: recommendations from a critical review of the literature. Indoor Air '93: Proceedings of the Sixth International Conference on Indoor Air Quality and Climate, 1993, Helsinki, 1:713-18.

Fisk WJ, Mendell MJ, Daisey JM, Faulkner D, Hodgson AT, Macher JN. The California Healthy Building Study, Phase 1: a summary. Indoor Air '93: Proceedings of the Sixth International Conference on Indoor Air Quality and Climate, 1993, Helsinki, 1:279-84.

Daisey JM, Hodgson AT, Fisk WJ, Mendell MJ, Ten Brinke J. Volatile organic compounds in twelve California office buildings: classes, concentrations, and sources. Indoor Air '93: Proceedings of the Sixth International Conference on Indoor Air Quality and Climate, 1993, Helsinki, 2:9-14.

Fisk WJ, Hodgson AT, Macher JM, Mendell MJ, et al. "Hypothesis-based research on the causes of sick building symptoms: a design for phases 2 and 3 of the California Healthy Building Study." technical report for Lawrence Berkeley Laboratory, Applied Science Division (available from National Technical Information Service, #LBL-33434), July, 1992.

Mendell MJ, Fisk WJ, Hodgson AT, Daisey JM. "Elevated symptom prevalence associated with mechanical supply ventilation: results from the California Healthy Building Study, phase 1." American Journal of Epidemiology 1992;136:970 [abstract].

Mendell, MJ. "Use of odds ratio questioned." letter, American Journal of Public Health 1992;82:896.

Mendell M. Risk factors for work-related symptoms in northern California office workers. Dissertation Abstracts International, 1992;53, no.5B, pub. no. 92-28,770, available from University Microfilms Inc., Ann Arbor, MI 48106 (doctoral dissertation in epidemiology, University of California at Berkeley); November, 1991.

Daisey JM, Fisk WJ, Hodgson AT, Mendell MJ, et al. "The California Healthy Building Study: I. Study design and protocol." technical report for Lawrence Berkeley Laboratory, Applied Science Division (available from National Technical Information Service, #LBL-29851), December, 1990.

Mendell MJ. "Elevated symptom prevalence in air-conditioned office buildings: a reanalysis of epidemiologic studies from the United Kingdom. Indoor Air '90: Proceedings of the Fifth International Conference on Indoor Air Quality and Climate, Toronto, 1990; 1:623-28.

### **Invited Presentations**

"Low Energy Buildings and Health," plenary talk, ASHRAE IAQ 2013, Vancouver, BC, Canada, October 15-18, 2013.

"Respiratory effects of indoor dampness and mold: what we know from epidemiology," Asthma Summit 2013, San Francisco, Dec 5-6, 2012.

"Dampness, mold, and health – translating science into public health policy," Environmental Law Institute, Annual Workshop for State and Local Indoor Air Quality Personnel, Washington DC, March 21, 2012.

"Epidemiologic evidence on respiratory effects of indoor dampness and mold." Annual conference of the European Academy of Allergy and Clinical Immunology, Geneva, Switzerland, June 19, 2012.

"Dampness, Mold, Health, and Policy: Using scientific knowledge as input for public policies. Environmental Law Institute, Indoor Air Quality Workshop, Washington DC, March 24, 2012.

"Dampness, Mold, and Health: What do we know and what should we do?" UCSF Occupational and Environmental Grand Rounds, San Francisco, CA, Dec 8, 2011.

"Dampness, Mold, and Health: What do we know and what should we do?" California Interagency Working Group on Indoor Air Quality, Richmond, CA, Dec 7, 2011.

"Dampness, Mold, and Health: What do we know and what should we do?" Annual Conference of the California Conference of Directors of Environmental Health, Squaw Valley, CA, Sep 29, 2011.

"Dampness, Mold, and Health: What do we know and what should we do?" podcast for Breath California, San Francisco, CA, Aug 3, 2011.

"Dampness, Mold, and Health: What do we know, how do we know it, and what should we do?" Environmental Health Committee of the California Conference of Local Health Officers, Sacramento, CA, Jul 28, 2011.

"Dampness, Mold, and Health: What do we know, how do we know it, and what should we do?" Dept of Environmental Engineering, U of Texas, Austin

"Dampness, Mold, and Health: What do we know and what should we do?" Annual Conference of the California Environmental Health Association, Ventura, CA, April 20, 2011.

"Indoor Risk Factors for Respiratory Health: Dampness/Dampness-Related Agents and Residential Chemical Emissions," California Department of Public Health, Quarterly Epidemiology Meeting, Richmond, CA; June 23, 2009.



"Two Types of Indoor Risk Factors for Respiratory Health: Dampness/Dampness-Related Agents and Residential Chemical Emissions," Alameda County Lead Poisoning Prevention Program, Feb, 2009.

"Two Types of Indoor Risk Factors for Respiratory Health: Dampness/Dampness-Related Agents and Residential Chemical Emissions," California Asthma Research Summit, San Francisco, CA; Dec 11, 2008.

"Indoor Residential Chemical Emissions as Risk Factors for Children's Respiratory Health," California Air Resources Board Chairman's Seminar Series, Sacramento, CA; August, 2006.

Indoor Chemical Emissions and Respiratory Health of Children," invited keynote presentation at the 4th International Academic Conference on Environmental and Occupational Medicine, Kunming, China; October 2006.

"A Literature Review of Indoor Chemical Emissions and Respiratory Health in Children" EPA Tools for Schools Conference, Washington, DC; Dec 2006.

"Indoor Chemical Emissions and Respiratory Health in Children" LBNL/EETD seminar series, Berkeley, CA; Feb 2007.

"Indoor Chemical Emissions and Respiratory Health in Children," IEQ Symposium, LBNL/IED, Berkeley, CA; March 2007.

"Epidemiology of Symptoms Attributed to Indoor Air Quality," Occupational and Environmental Epidemiology class, Program in Epidemiology, School of Public Health, University of California at Berkeley; March, 2002.

"Indoor Work Environments and Health: Current Knowledge and Suggested Research," Occupational and Environmental Medicine Grand Rounds, University of California at San Francisco Medical School; San Francisco, CA; March, 2001.

"Research on Health Effects in Indoor Work Environments: from NIOSH to LBNL," presented to the California Interagency Working Group on Indoor Air Quality quarterly meeting; Berkeley, CA; December 2000.

Plenary speaker: "How Much to Ventilate Buildings?" Healthy Buildings 2000; Helsinki, Finland; August, 2000.

"An Epidemiologic Perspective on Bioaerosols and Health Effects in Indoor Work Environments," Workshop on Novel Methods for Bioaerosol Exposure Assessment in Health Effects Research; Morgantown, WV; September, 2000.

Invited lecturer in the 4<sup>th</sup> International Course on Indoor Air Quality Problems in the Office Environment: "Nonspecific Symptoms in Indoor Office Environments: What Do We Know," "Nonspecific Symptoms in Indoor Office Environments: Suggested Research Directions and Strategies," "Enhanced Particle Filtration in a Non-Problem Office Environment: Findings from a Double-Blind Crossover Intervention Study." Nordic Institute for Advance Training In Occupational Health (NIVA); Copenhagen, Denmark; October, 1999.

"Nonspecific Symptoms in Office Workers: A Critical Appraisal of International Studies," International Centre for Indoor Environment and Energy, Danish Technical University; Copenhagen, Denmark; March, 1999.

"What is the Relationship Between Perceived Air Quality and Building-Related Symptoms?" Senior Faculty Salon, International Centre for Indoor Environment and Energy, Danish Technical University; Copenhagen,

Denmark; March, 1999.

“Nonspecific Symptoms in Office Workers: A Critical Appraisal of International Studies” Danish National Institute for Occupational Health; Copenhagen, Denmark; March, 1999.

Keynote speaker: “Nonspecific Symptoms in Office Workers: A Critical Appraisal of International Studies.” SBS III Workshop on ProKlimA Study of Indoor Air and Health: German Ministry of Education, Science, Research, and Technology, Bonn, Germany; March, 1999.

“The NORA Indoor Environment Team: Activities in Implementing the National Occupational Research Agenda.” Workshop on Indoor Air Quality and Health, Electric Power Research Institute and Electricité de France, Boston, December, 1997.

“Nonspecific Health symptoms in Office Workers: What Do We Know?” Workshop on Indoor Air Quality and Health, Electric Power Research Institute and Electricité de France, Boston, December, 1997.

Main speaker: “The NORA Indoor Environment Team: Activities in Implementing the National Occupational Research Agenda.” Federal Interagency Committee on Indoor Air Quality (CIAQ): Washington, DC, October, 1997.

Keynote speaker: “Nonspecific Health Symptoms in Office Workers: What Do We Know? Where Do We Need To Go?” American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE)/IAQ 96: Paths to Better Building Environments, Baltimore, MD, October, 1996.

“Environmental Factors and Nonspecific Symptoms in Office Workers: What Do We Know?” Tenth Medical Symposium of the Yrjö Jahnsson Foundation, on Indoor Air and Health: Causative Agents, Health Hazards, and Risk Assessment. Porvoo, Finland; August, 1996.

“United States Government Activities in Indoor Air.” Tenth Medical Symposium of the Yrjö Jahnsson Foundation, on Indoor Air and Health: Causative Agents, Health Hazards, and Risk Assessment. Porvoo, Finland; August, 1996.

Plenary speaker: “Environmental and Host Factors Associated with Office Worker Symptoms: What Do We Know and Where Do We Need To Go.” 1994 State-of-the-Art Conference of the American College of Occupational and Environmental Medicine, Denver, CO; October, 1994.

“NIOSH Activities in Indoor Environmental Quality Research.” presentation to the ANSI/OSHA Coordinating Committee, Washington, DC; March, 1994.

“Elevated Symptom Prevalence Associated with Mechanical Supply Ventilation: Results from the California Healthy Building Study, Phase 1.” presentation to the University of Minnesota Department of Engineering, Minneapolis, MI; June 1992.

#### **Other Presentations**

Mendell MJ, Eliseeva A, Davies MM, Lobscheid A, Fisk WJ, Apte, MG. Association of lower classroom ventilation rates with increased illness absence in a prospective study of California elementary Schools. Environmental Health 2013, Basel, Switzerland, Aug 19-23, 2013.

Mendell MJ. Evaluating damp houses with the Environmental Relative Moldiness Index (ERMI) and fungal PCR: A review of the epidemiologic evidence? Indoor Air 2011, Austin, TX; Jun 5-10, 2011.

Mendell MJ. Science-based public policies for dampness and mold – How should we protect the public given what we know? Indoor Air 2011, Austin, TX; Jun 5-10, 2011.

Mendell MJ. What do we know (and not know) about indoor dampness, mold, and health? Indoor Air 2011,

Austin, TX; Jun 5-10, 2011.

Buchanan ISH, Apte MG, Mirer A, Mendell MJ. Outdoor Ozone Modifies Effects of Air Filter Medium on Building-Related Symptoms in the U.S. EPA BASE Study. 2007 Annual Conference of the International Society for Environmental Epidemiology, Mexico City, Mexico.

Mendell MJ, Lei-Gomez Q, Mirer A, Seppänen O. Heating, Ventilating, and Air-Conditioning Systems and Occupant Symptoms in U.S. Office Buildings: the U.S. EPA BASE Study. 2007 Annual Conference of the Society for Epidemiologic Research; Boston MA.

Mendell MJ. Indoor Residential Chemical Emissions as Risk Factors for Respiratory Health Effects in Infants and Children: a Review. 2006 Annual Conference of the Society for Epidemiologic Research

Mendell MJ, Seppänen O, Lei Q. Ventilation System-Related Risk Factors and Symptoms among Occupants in U.S. Office Buildings – Results from the BASE Study. 2005, Annual Conference of the Society for Epidemiologic Research, Toronto, Canada

Mendell MJ, Naco GN, Wilcox TG, Sieber WK. Lower respiratory symptom-based outcome definitions to assess risk factors for microbiologic contamination in office buildings. 2002 Conference of the International Society for Environmental Epidemiology, Vancouver, BC, Canada.

Mendell MJ, Naco GN, Wilcox TG, Sieber WK. Building-related risk factors and work-related lower respiratory symptoms in 80 office buildings. Indoor Air '02, Monterey, CA, June 30-July 5, 2002.

Mendell MJ, Fisk WJ, Petersen M, Dong MX, Hines CH, Faulkner D, Deddens JA, Ruder AM, Sullivan D, Boeniger MF. "Enhanced particle filtration in a non-problem office environment: summary findings from a double-blind crossover intervention study." presentation at Indoor Air '99: the 8<sup>th</sup> International Conference on Indoor Air Quality and Climate, Edinburgh, Scotland; August , 1999.

Mendell MJ, Fisk WJ., Petersen M, Hines CJ, Faulkner D, Deddens JA, Dong MX, Ruder AM, Sullivan D, Boeniger MF. AEffects on Occupants of Enhanced Particle Filtration in a Non-Problem Office Environment: "Double-Blind Crossover Intervention Study." presentation at The Seventh Joint NIOSH/Finnish Institute of Occupational Safety and Health/Swedish National Institute of Working Life Science Symposium, Pittsburgh, Pennsylvania; October, 1998.

Mendell MJ, Sieber WK, Dong MX, Malkin, R, Wilcox, T. "Symptom Prevalence Distributions in U.S. Office Buildings Investigated by NIOSH for Indoor Environmental Quality Complaints." presentation at Indoor Air '96: The 7<sup>th</sup> International Conference on Indoor Air Quality and Climate, Nagoya, Japan; July, 1996.

Mendell MJ, Fisk WJ, Deddens JA, Seavey WG, Hodgson AT, Daisey JM, Smith AH, Smith DF. "Ventilation Type as a Risk Factor for Building-Related Symptoms in the California Healthy Building Study." presentation at the annual meeting of the Society for Epidemiologic Research, Snowbird, UT; June, 1995.

Mendell MJ. "Epidemiologic Research on Office Worker Symptoms: A Review and Summary." seminar for the Division of Surveillance, Hazard Evaluations, and Field Studies, NIOSH, Cincinnati, OH; Sept, 1993.

Mendell MJ. "Optimizing Research on Office Worker Symptoms: Recommendations from a Critical Review of the Literature." presentation at Indoor Air '93: the 6<sup>th</sup> International Conference on Indoor Air Quality and Climate, Helsinki; 1993.

Mendell MJ. "Office Worker Symptoms and Indoor Environmental Quality: What Do We Know?" presented in a course "Indoor Air Quality for IRS Facility Managers," sponsored by the U.S. Internal

Revenue Service, Cincinnati, OH.; April 12-13, 1993.

Mendell MJ, Fisk WJ, Hodgson AT, Daisey JM. "Elevated Symptom Prevalence Associated with Mechanical Supply Ventilation: Results from the California Healthy Building Study, Phase 1." presentation at the annual meeting of the Society for Epidemiologic Research, Minneapolis, MI; June 1992.

Mendell MJ. "Work-Related Symptoms and Individual Factors." presentation at the American Society of Heating, Refrigerating, and Air-Conditioning Engineers meeting, Indianapolis; June 1991.

Mendell MJ, Fisk WJ. "Work-Related Symptoms and Building Factors." presentation at the American Society of Heating, Refrigerating, and Air-Conditioning Engineers meeting, Indianapolis; June 1991.

Mendell MJ, Lipscomb J. "Interpretation of Symptom Data in Populations with Environmental Worry." presentation at the International Society of Environmental Epidemiology Meeting, Berkeley, CA; August, 1990.

Mendell MJ. "Elevated Symptom Prevalence in Air-Conditioned Office Buildings: A Reanalysis of Epidemiologic Studies from the United Kingdom." presentation at the 5<sup>th</sup> International Conference on Indoor Air Quality and Climate, Toronto; May, 1990.

Mendell MJ. "Methodologic Issues in Epidemiologic Research on Building-Related Illness." presentation at the Western Regional Epidemiology Network Meeting, Ashland, OR; May, 1988.

Mendell MJ. "Health Effects Related to Indoor Air in Non-Industrial Occupational Exposures: A Review." presentation at the Western Regional Epidemiology Network Meeting, Ashland OR; May, 1987.

Mendell MJ. "Uses of Computerized Data on Superfund Waste Sites for Epidemiologic Leads." presentation at the Western Regional Epidemiology Network Meeting, Ashland OR; May, 1985.

### **Honors, Awards, Fellowships**

Best Paper Award, selected by experts in the field as one of best papers in journal Indoor Air during 2009-2011: Fisk WJ, Mirer AG, Mendell MJ. Quantitative relationship of sick building syndrome symptoms with ventilation rates. Indoor Air 2009;19:159-65.

Citation in the journal Indoor Air (2009;19:91) as the third most cited article in the prior 18 years of the journal: Mendell MJ. Non-specific symptoms in office workers: a review and summary of the epidemiologic literature. Indoor Air 1993;3:227-36.

Selection in 2008 by the editorial board of the journal Indoor Air as Best Paper (one of top 3 papers in prior 3 years): Mendell MJ, Heath GA. Do indoor pollutants and thermal conditions in schools influence student performance? A critical review of the literature. Indoor Air 2005; 15:27-52.

Selection in July 2008 by the Children's Environmental Health Network as Children's Environmental Health Article of the Month, to highlight the science basis of current children's environmental health issues: Mendell MJ. Indoor residential chemical emissions as risk factors for respiratory and allergic effects in children: a review. Indoor Air 2007;17:259-77; [http://www.cehn.org/science\\_aom.htm](http://www.cehn.org/science_aom.htm).

Winner, Highly Commended Paper, Emerald Literati Network Awards for Excellence 2007, for "Causes and prevention of symptom complaints in office buildings: distilling the experience of indoor environmental quality investigators," Mendell MJ, et al., Facilities 2006; 24:436-44.

Runner-up, 2003 Rothman Epidemiology Prize (best paper in the journal Epidemiology, based on criteria of importance, originality, clarity of thought, and excellence in writing) for Mendell et al., Indoor particles and symptoms among office workers: results from a double-blind cross-over study. Epidemiology 2002;13:

296-304.

Best Paper Award (coauthor), Indoor Air Journal 1996-1998, International Academy of Indoor Air Sciences, (J Ten Brinke, S Selvin, AT Hodgson, WJ Fisk, MJ Mendell, CP Koshland, JM Daisey. Development of new volatile organic compound (VOC) exposure metrics and their relationship to “sick building syndrome” symptoms. 1988; 8:140-152.

American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) Distinguished Lecturer Program, 1999-2001.

Academy of Fellows, International Society for Indoor Air Quality (membership by election; formerly International Academy of Indoor Air Sciences), 1999 - present.

NIOSH awards:

Service Awards: 1998; 1994.

Performance Awards: 2002, 2001, 2000, 1999; 1998; 1997; 1996; 1995.

National Cancer Institute/Society for Epidemiologic Research, Student Workshop Fellowship, 1991.

U.C. Berkeley: Toxic Substances Research Fellowship (1987-89); Graduate Dean's Research Grant (1988-89); Dowdle Fund Research Award (1988-89, 1990-91); Graduate Honor Society.

Cornell University: College Scholar; Dean's List.

#### **Professional Committees/Teams/Editorial Boards**

WHO working group for Indoor Air Quality Guidelines – invited to lead review of epidemiologic evidence on dampness/mold and health, for publication with WHO guidelines, 2007.

Editorial Board: Indoor Air -- International Journal of Indoor Air Quality and Climate, 2005- present; 2000-2003.

Healthy Buildings Conferences, Committee of International Advisors: Helsinki, 2000; Singapore, 2003.

International Conferences on Indoor Air Quality and Climate, Committee of International Advisors: Edinburgh, 1999; Monterey CA, 2002.

NIOSH National Occupational Research Agenda (NORA), Indoor Environment Team: team leader, 1996 – 2002; member, 2002 – present.

US Dept. of Labor/OSHA Hearings on Proposed Rule for Indoor Air Quality: member of NIOSH testimony team. Washington, DC; October, 1994.

US EPA, Steering Committee for Building Assessment and Survey Evaluation (BASE) Study: member of Study Design Team, 1991-92.

#### **Invitational Workshops and Session Chairs**

Indoor Air '99 – The Eighth International Conference on Indoor Air Quality and Climate: Co-chair of Session on Sick Building Syndrome Research Methods. Edinburgh, Scotland; August, 1999.

National Research Council/National Institute for Standards and Technology Workshop on Buildings and Worker Performance. Washington, DC; April, 1998.

International Society of Indoor Air Quality and Climate (ISIAQ): co-chair of ISIAQ task group meeting on SBS questionnaires. ISIAQ Fifth International Conference on Healthy Buildings: Bethesda, MD; October, 1997.

US EPA, Workshop on “Protecting Human Health Indoors in the 21<sup>st</sup> Century.” Washington, DC; November, 1997.

American Lung Association/American Thoracic Society/EPA/CDC workshop on “Healthy Indoor Air.” Santa Fe, NM; November, 1995.

US EPA Building Air Quality Intervention Research Workshop. Washington, DC; March 1998.

California Department of Health Services, Panel on Evaluating Individuals Reporting Multiple Chemical Sensitivity. 1994.

National Research Council Workshop on Multiple Chemical Hypersensitivity Syndrome: Epidemiology Working Group. Irvine, CA; 1991.

#### **Reviewer for Professional Journals**

American Journal of Epidemiology  
American Journal of Public Health  
Atmospheric Environment  
Chemical Reviews  
Environmental Health  
Environmental Health Perspectives  
Epidemiologic Reviews  
Indoor Air: International Journal of Indoor Air Quality and Climate  
International Journal of Epidemiology  
Journal of Occupational and Environmental Hygiene  
New England Journal of Medicine  
Occupational and Environmental Medicine  
Scandinavian Journal of Work, Environment & Health  
Environmental Practice

#### **Professional Societies**

Society for Epidemiologic Research  
International Society for Environmental Epidemiology  
International Society of Indoor Air Quality and Climate  
International Academy of Indoor Air Sciences